| Symbol | Typ | Titel |
|---|---|---|
| **F** | **Sektion** | **SECTION F — MECHANICAL ENGINEERING; LIGHTING; HEATING; WEAPONS; BLASTING** |
| **F02** | **Klasse** | **COMBUSTION ENGINES (cyclically operating valves therefor, lubricating, exhausting, or silencing engines F01); HOT-GAS OR COMBUSTION-PRODUCT ENGINE PLANTS** |
| **F02K** | **Unterklasse** | **JET-PROPULSION PLANTS (arrangement or mounting of jet-propulsion plants in land vehicles or vehicles in general B60K; arrangement or mounting of jet-propulsion plants in waterborne vessels B63H; controlling aircraft attitude, flight direction, or altitude by jet reaction B64C; arrangement or mounting of jet-propulsion plants in aircraft B64D; plants characterised by the power of the working fluid being divided between jet propulsion and another form of propulsion, e.g. propeller, F02B, F02C; features of jet-propulsion plants common to gas-turbine plants, air intakes or fuel supply control of air-breathing jet-propulsion plants F02C)** |
| **F02K 1/00** | **Hauptgruppe** | **Plants characterised by the form or arrangement of the jet pipe or nozzle; Jet pipes or nozzles peculiar thereto (rocket nozzles F02K 9/97)** |
| F02K 1/04 | 1-Punkt Untergruppe | . Mounting of an exhaust cone in the jet pipe |
| F02K 1/06 | 1-Punkt Untergruppe | . Varying effective area of jet pipe or nozzle (F02K 1/30 takes precedence) [3] |
| F02K 1/08 | 2-Punkt Untergruppe | . . by axially moving or transversely deforming an internal member, e.g. the exhaust cone |
| F02K 1/09 | 2-Punkt Untergruppe | . . by axially moving an external member, e.g. a shroud (F02K 1/12 takes precedence) [3] |
| F02K 1/10 | 2-Punkt Untergruppe | . . by distorting the jet pipe or nozzle |
| F02K 1/11 | 2-Punkt Untergruppe | . . by means of pivoted eyelids [3] |
| F02K 1/12 | 2-Punkt Untergruppe | . . by means of pivoted flaps |
| F02K 1/15 | 2-Punkt Untergruppe | . . Control or regulation [3] |
| F02K 1/16 | 3-Punkt Untergruppe | . . . conjointly with another control [3] |
| F02K 1/17 | 4-Punkt Untergruppe | . . . . with control of fuel supply [3] |
| F02K 1/18 | 3-Punkt Untergruppe | . . . automatic [3] |
| F02K 1/28 | 1-Punkt Untergruppe | . using fluid jets to influence the jet flow [3] |
| F02K 1/30 | 2-Punkt Untergruppe | . . for varying effective area of jet pipe or nozzle [3] |
| F02K 1/32 | 2-Punkt Untergruppe | . . for reversing thrust [3] |
| F02K 1/34 | 2-Punkt Untergruppe | . . for attenuating noise [3] |
| F02K 1/36 | 1-Punkt Untergruppe | . having an ejector [3] |
| F02K 1/38 | 1-Punkt Untergruppe | . Introducing air inside the jet (F02K 1/28 takes precedence) [3] |
| F02K 1/40 | 1-Punkt Untergruppe | . Nozzles having means for dividing the jet into a plurality of partial jets or having an elongated cross-section outlet [3] |
| F02K 1/42 | 2-Punkt Untergruppe | . . the means being movable into an inoperative position [3] |
| F02K 1/44 | 1-Punkt Untergruppe | . Nozzles having means, e.g. a shield, reducing sound radiation in a specified direction (F02K 1/40 takes precedence) [3] |

| Symbol | Typ | Titel |
|---|---|---|
| F02K 1/46 | 1-Punkt Untergruppe | . Nozzles having means for adding air to the jet or for augmenting the mixing region between the jet and the ambient air, e.g. for silencing (F02K 1/28, F02K 1/36, F02K 1/38 take precedence) [3] |
| F02K 1/48 | 2-Punkt Untergruppe | . . Corrugated nozzles [3] |
| F02K 1/50 | 2-Punkt Untergruppe | . . Deflecting outwardly a portion of the jet by retractable scoop-like baffles [3] |
| F02K 1/52 | 1-Punkt Untergruppe | . Nozzles specially constructed for positioning adjacent to another nozzle or to a fixed member, e.g. fairing [3] |
| F02K 1/54 | 1-Punkt Untergruppe | . Nozzles having means for reversing jet thrust (F02K 1/32 takes precedence) [3] |
| F02K 1/56 | 2-Punkt Untergruppe | . . Reversing jet main flow [3] |
| F02K 1/58 | 3-Punkt Untergruppe | . . . Reversers mounted on the inner cone or the nozzle housing [3] |
| F02K 1/60 | 3-Punkt Untergruppe | . . . by blocking the rearward discharge by means of pivoted eyelids or clamshells, e.g. target-type reversers [3] |
| F02K 1/62 | 3-Punkt Untergruppe | . . . by blocking the rearward discharge by means of flaps [3] |
| F02K 1/64 | 2-Punkt Untergruppe | . . Reversing fan flow [3] |
| F02K 1/66 | 3-Punkt Untergruppe | . . . using reversing fan blades [3] |
| F02K 1/68 | 3-Punkt Untergruppe | . . . Reversers mounted on the engine housing downstream of the fan exhaust section [3] |
| F02K 1/70 | 3-Punkt Untergruppe | . . . using thrust reverser flaps or doors mounted on the fan housing [3] |
| F02K 1/72 | 4-Punkt Untergruppe | . . . . the aft end of the fan housing being movable to uncover openings in the fan housing for the reversed flow [3] |
| F02K 1/74 | 2-Punkt Untergruppe | . . Reversing at least one flow in relation to at least one other flow in a plural-flow engine [3] |
| F02K 1/76 | 2-Punkt Untergruppe | . . Control or regulation of thrust reversers [3] |
| F02K 1/78 | 1-Punkt Untergruppe | . Other construction of jet pipes [3] |
| F02K 1/80 | 2-Punkt Untergruppe | . . Couplings or connections [3] |
| F02K 1/82 | 2-Punkt Untergruppe | . . Jet pipe walls, e.g. liners [3] |
| **F02K 3/00** | **Hauptgruppe** | **Plants including a gas turbine driving a compressor or a ducted fan** |
| F02K 3/02 | 1-Punkt Untergruppe | . in which part of the working fluid by-passes the turbine and combustion chamber |
| F02K 3/04 | 2-Punkt Untergruppe | . . the plant including ducted fans, i.e. fans with high volume, low-pressure outputs, for augmenting jet thrust, e.g. of double-flow type |
| F02K 3/06 | 3-Punkt Untergruppe | . . . with front fan |
| F02K 3/062 | 3-Punkt Untergruppe | . . . with aft fan [3] |
| F02K 3/065 | 3-Punkt Untergruppe | . . . with front and aft fans [3] |
| F02K 3/068 | 3-Punkt Untergruppe | . . . being characterised by a short axial length relative to diameter [3] |
| F02K 3/072 | 3-Punkt Untergruppe | . . . with counter-rotating rotors [3] |
| F02K 3/075 | 3-Punkt Untergruppe | . . . controlling flow ratio between flows [3] |
| F02K 3/077 | 3-Punkt Untergruppe | . . . the plant being of the multiple flow type, i.e. having three or more flows [3] |
| F02K 3/08 | 1-Punkt Untergruppe | . with supplementary heating of the working fluid (after-burners, combustion chambers F23R); Control thereof (control of fuel supply therefor F02C 9/26) [3] |

| Symbol | Typ | Titel |
|---|---|---|
| F02K 3/10 | 2-Punkt Untergruppe | . . by after-burners (F02K 3/105 takes precedence) [3] |
| F02K 3/105 | 2-Punkt Untergruppe | . . Heating the by-pass flow [3] |
| F02K 3/11 | 3-Punkt Untergruppe | . . . by means of burners or combustion chambers [3] |
| F02K 3/115 | 3-Punkt Untergruppe | . . . by means of indirect heat exchange [3] |
| F02K 3/12 | 1-Punkt Untergruppe | . characterised by having more than one gas turbine |
| **F02K 5/00** | **Hauptgruppe** | **Plants including an engine, other than a gas turbine, driving a compressor or a ducted fan** |
| F02K 5/02 | 1-Punkt Untergruppe | . the engine being of the reciprocating-piston type |
| **F02K 7/00** | **Hauptgruppe** | **Plants in which the working-fluid is used in a jet only, i.e. the plants not having a turbine or other engine driving a compressor or a ducted fan; Control thereof (rocket-engine plants F02K 9/00)** |
| F02K 7/02 | 1-Punkt Untergruppe | . the jet being intermittent, i.e. pulse jet |
| F02K 7/04 | 2-Punkt Untergruppe | . . with resonant combustion chambers |
| F02K 7/06 | 2-Punkt Untergruppe | . . with combustion chambers having valves |
| F02K 7/067 | 3-Punkt Untergruppe | . . . having aerodynamic valves [3] |
| F02K 7/075 | 2-Punkt Untergruppe | . . with multiple pulse-jet engines [3] |
| F02K 7/08 | 1-Punkt Untergruppe | . the jet being continuous |
| F02K 7/10 | 1-Punkt Untergruppe | . characterised by having ram-action compression, i.e. aero-thermo-dynamic-ducts or ram-jet engines |
| F02K 7/12 | 2-Punkt Untergruppe | . . Injection-induction jet engines [3] |
| F02K 7/14 | 2-Punkt Untergruppe | . . with external combustion, e.g. scram-jet engines [3] |
| F02K 7/16 | 2-Punkt Untergruppe | . . Composite ram-jet/turbo-jet engines [3] |
| F02K 7/18 | 2-Punkt Untergruppe | . . Composite ram-jet/rocket engines [3] |
| F02K 7/20 | 2-Punkt Untergruppe | . . Composite ram-jet/pulse-jet engines [3] |
| **F02K 9/00** | **Hauptgruppe** | **Rocket-engine plants, i.e. plants carrying both fuel and oxidant therefor; Control thereof ( chemical composition of propellants C06B, C06D) [3]** |
| F02K 9/08 | 1-Punkt Untergruppe | . using solid propellants (F02K 9/72 takes precedence; using semi-solid or pulverulent propellants F02K 9/70) [3] |
| F02K 9/10 | 2-Punkt Untergruppe | . . Shape or structure of solid propellant charges [3] |
| F02K 9/12 | 3-Punkt Untergruppe | . . . made of two or more portions burning at different rates [3] |
| F02K 9/14 | 3-Punkt Untergruppe | . . . made from sheet-like materials, e.g. of carpet-roll type, of layered structure [3] |
| F02K 9/16 | 3-Punkt Untergruppe | . . . of honeycomb structure [3] |
| F02K 9/18 | 3-Punkt Untergruppe | . . . of the internal-burning type having a star or like shaped internal cavity [3] |
| F02K 9/20 | 3-Punkt Untergruppe | . . . of the external-burning type [3] |
| F02K 9/22 | 3-Punkt Untergruppe | . . . of the front-burning type [3] |
| F02K 9/24 | 2-Punkt Untergruppe | . . Charging rocket engines with solid propellants; Methods or apparatus specially adapted for working solid propellant charges [3] |
| F02K 9/26 | 2-Punkt Untergruppe | . . Burning control [3] |

| Symbol | Typ | Titel |
|---|---|---|
| F02K 9/28 | 2-Punkt Untergruppe | . . having two or more propellant charges with the propulsion gases exhausting through a common nozzle [3] |
| F02K 9/30 | 2-Punkt Untergruppe | . . with the propulsion gases exhausting through a plurality of nozzles [3] |
| F02K 9/32 | 2-Punkt Untergruppe | . . Constructional parts; Details (shape or structure of solid propellant charges F02K 9/10; starting or ignition means or arrangements F02K 9/95; rocket nozzles F02K 9/97) [3] |
| F02K 9/34 | 3-Punkt Untergruppe | . . . Casings; Combustion chambers; Liners thereof [3] |
| F02K 9/36 | 3-Punkt Untergruppe | . . . Propellant charge supports [3] |
| F02K 9/38 | 3-Punkt Untergruppe | . . . Safety devices, e.g. to prevent accidental ignition [3] |
| F02K 9/40 | 3-Punkt Untergruppe | . . . Cooling arrangements [3] |
| F02K 9/42 | 1-Punkt Untergruppe | . using liquid or gaseous propellants (F02K 9/72 takes precedence) [3] |
| F02K 9/44 | 2-Punkt Untergruppe | . . Feeding propellants [3] |
| F02K 9/46 | 3-Punkt Untergruppe | . . . using pumps (pumps per seF04) [3] |
| F02K 9/48 | 4-Punkt Untergruppe | . . . . driven by a gas turbine fed by propellant combustion gases [3] |
| F02K 9/50 | 3-Punkt Untergruppe | . . . using pressurised fluid to pressurize the propellants [3] |
| F02K 9/52 | 3-Punkt Untergruppe | . . . Injectors (in general B05B) [3] |
| F02K 9/54 | 3-Punkt Untergruppe | . . . Leakage detectors; Purging systems; Filtration systems (filters per seB01D) [3] |
| F02K 9/56 | 3-Punkt Untergruppe | . . . Control [3] |
| F02K 9/58 | 4-Punkt Untergruppe | . . . . Propellant feed valves (valves in general F16K) [3] |
| F02K 9/60 | 2-Punkt Untergruppe | . . Constructional parts; Details (starting or ignition means or arrangements F02K 9/95; rocket nozzles F02K 9/97) [3] |
| F02K 9/62 | 3-Punkt Untergruppe | . . . Combustion or thrust chambers [3] |
| F02K 9/64 | 4-Punkt Untergruppe | . . . . having cooling arrangements [3] |
| F02K 9/66 | 4-Punkt Untergruppe | . . . . of the rotary type [3] |
| F02K 9/68 | 3-Punkt Untergruppe | . . . Decomposition chambers [3] |
| F02K 9/70 | 1-Punkt Untergruppe | . using semi-solid or pulverulent propellants [3] |
| F02K 9/72 | 1-Punkt Untergruppe | . using liquid and solid propellants, i.e. hybrid rocket-engine plants [3] |
| F02K 9/74 | 1-Punkt Untergruppe | . combined with another jet-propulsion plant [3] |
| F02K 9/76 | 2-Punkt Untergruppe | . . with another rocket-engine plant; Multistage rocket-engine plants [3] |
| F02K 9/78 | 2-Punkt Untergruppe | . . with an air-breathing jet-propulsion plant (with a ram-jet engine F02K 7/18) [3] |
| F02K 9/80 | 1-Punkt Untergruppe | . characterised by thrust or thrust vector control (F02K 9/26, F02K 9/56, F02K 9/94 take precedence) [3] |
| F02K 9/82 | 2-Punkt Untergruppe | . . by injection of a secondary fluid into the rocket exhaust gases [3] |
| F02K 9/84 | 2-Punkt Untergruppe | . . using movable nozzles [3] |
| F02K 9/86 | 2-Punkt Untergruppe | . . using nozzle throats of adjustable cross-section [3] |

| Symbol | Typ | Titel |
|---|---|---|
| F02K 9/88 | 2-Punkt Untergruppe | . . using auxiliary rocket nozzles [3] |
| F02K 9/90 | 2-Punkt Untergruppe | . . using deflectors (F02K 9/82 takes precedence) [3] |
| F02K 9/92 | 2-Punkt Untergruppe | . . incorporating means for reversing or terminating thrust [3] |
| F02K 9/94 | 1-Punkt Untergruppe | . Re-ignitable or restartable rocket-engine plants; Intermittently operated rocket-engine plants [3] |
| F02K 9/95 | 1-Punkt Untergruppe | . characterised by starting or ignition means or arrangements (safety devices F02K 9/38) [3] |
| F02K 9/96 | 1-Punkt Untergruppe | . characterised by specially adapted arrangements for testing or measuring [3] |
| F02K 9/97 | 1-Punkt Untergruppe | . Rocket nozzles (thrust or thrust vector control F02K 9/80) [3] |
| **F02K 11/00** | **Hauptgruppe** | **Plants not provided for in the other groups of this subclass [3]** |